Activity Title: WATER WINGS			Activity Guide Page #: 4
Objective(s): Students will:1) illustrate the water cycle; 2) describe the interrelatedness of the world's water; and 3) state the importance of water to people, plants and animals.			
Method/Overview: Students experience a simulated field trip and then create artwork and poetry.			
Subject Area(s): Science, Art, Language Arts			Grade Level(s): 5-9
Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to ensure high alignment for every student**
Social Studies - Geography A. Skills And Tools Students will know how to construct and interpret maps and use globes and other geographic tools to locate and derive information about people, places, regions, and environments.	Elementary Grades Pre-K-2 1. Use and construct maps and other visuals to describe geographic location, direction, size, and shape.	Procedure #8 Display the pictures and poetry in a circle around a world map. With yarn, connect the pictures that the students have painted of their favorite places to the sites where they appear on the map.	• make sure all students are able to accurately identify their "favorite" spot • for younger children, it is less important to consider the whole world; an area map may be more realistic
	Middle Grades 5-8 2. Develop maps, globes, charts, models, and databases to analyze geographical patterns on the earth.	Extension Find out the annual rainfall and climate in the area you chose to paint. Trace the migratory path of salmon, tuna or whale and describe the qualities of the different water environments that the animal experiences.	• Create a class map to record on and from which to analyze data • students can work as teams or individuals to construct migratory maps

Waterwings
By Jim Verrill

As described in the activity, students participate in a simulated field trip illustrating the interconnections of the Earth's water. Students are asked to select their favorite spot (described in the text) along the journey 'round the world. Asa Adams students take the extra step of locating that favorite spot on a world map. Students then research that region to find out about available water resources such as annual rainfall and the numbers of lakes and rivers. This information is recorded on their map. Throughout the year, students add more environmental data, such as climate, native animals, and topography to fill out their 'mind pictures' that sprung from a simulated field trip.

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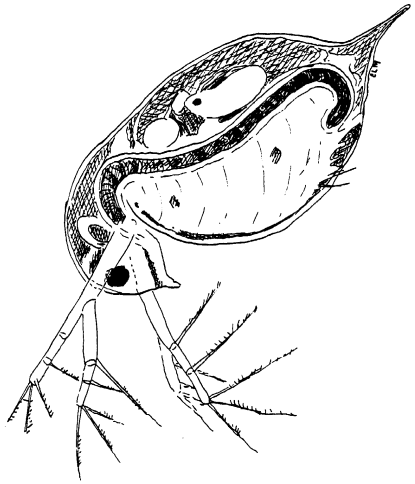
Activity Title: MICRO ODYSSEY			Activity Guide Page #: 64
Objective(s): Students will: 1) identify forms of microscopic life that live in water: and 2) describe the interrelatedness of various aquatic plants and animals.			
Method/Overview: Students will examine, draw, paint and identify microorganisms in pond water.			
Subject Area(s): Science, Art			Grade Level(s): 4-12
Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - History C. Historical Inquiry, Analysis, and Interpretation Students will learn to evaluate resource material such as documents, artifacts, maps, artworks, and literature, and to make judgments about the perspectives of the authors and their credibility when interpreting current historical events.	Middle Grades 5-8 5. Formulate historical questions based on examination of primary and secondary sources including documents, eyewitness accounts, letters and diaries, artifacts, real or simulated historical sites, charts, graphs, diagrams, and written texts.	Extension #4 Find examples of maps in the past by some of the famous explorers.	• have each student generate a list of questions that they formulate to be used in a whole class discussion



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Activity Title: BLUE RIBBON NICHE			Activity Guide Page #: 72
Objective(s): Students will: 1) identify different organisms that live in riparian ecosystems; 2) describe the ecological role of some organisms in riparian habitats; 3) describe some basic characteristics of riparian habitats; and 4) evaluate potential positive and negative effects from changes in riparian habitats.			
Method/Overview: Students create a variety of representations of animals that live in riparian habitats.			
Subject Area(s): Science, Language Arts			Grade Level(s): 5-12
Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies Economics A. Personal and Consumer Economics Students will understand that economic decisions are based on the availability of resources and the costs and benefits of choices.	Secondary Grades 1. Conduct a cost benefit analysis of a personal or business decision.	Evaluation #4 A large stand of trees in a riparian area is being evaluated for its economic potential. What other values would you ask the owners to consider before making a decision whether or not to cut the trees? Explain.	• all students will create a cost benefit analysis for this scenario

Activity Title: HOOKS AND LADDERS Activity Guide Page #: 76

Objective(s): Students will: 1) recognize that some fish migrate as part of their life cycle; 2) identify the stages of the life cycle of one kind of fish; 3) describe limiting factors affecting Pacific salmon as they complete the their life cycle; and 4) generalize that limiting factors affect all populations of animals.

Method/Overview: Students simulate Pacific salmon and the hazards faced by salmon in an activity portraying the life cycle of these aquatic creatures.

Subject Area(s): Social Studies, Geography, Math, Science Grade Level(s): 3-9

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies- History A. Chronology Students will use the chronology of history and major eras to demonstrate the relationships of events and people.	Secondary Grades 1. Identify and analyze major events and people that characterize each of the significant eras in the United States and world history	Extension #9 To simulate these increases in salmon limiting factors, play several rounds of "Hooks and Ladders." Allow each round to represent the passage of 25 years.	• focus discussion about this game variation to the changes during the 25 year periods and why those changes came about
Social Studies - History B. Historical Knowledge, Concepts, and Patterns Students will develop historical knowledge of major events, people, and enduring themes in the United States, in Maine, and throughout world history.	Middle Grade 5-8 2. Demonstrate an understanding of selected themes in Maine, United States and World History (e.g., revolution, technological innovation, migration).	Extension #9 To simulate these increases in salmon limiting factors, play several rounds of "Hooks and Ladders." Allow each round to represent the passage of 25 years.	• focus discussion about this game variation to the changes during the 25 year periods and why those changes came about
	Middle Grades 5-8 4. Demonstrate an understanding of selected twentieth century issues and events in United States and in Maine history including "modern" Maine history (1945 to present).	Extension #9 Variation Atlantic salmon	• See above • use variation to make a connection to Maine History and the limiting factors created in our state
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 2. Explain patterns of migration throughout the world.	Procedure #11 Ask the students to summarize about the life cycle of salmon, the salmon's migration and limiting factors that affect salmon. Extension #1 Write a report on the life history of one of the species of salmon.	• Include an explanation of their migratory patterns

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Activity Title: WHERE DOES WATER RUN OFF AFTER SCHOOL? Activity Guide Page #: 82

Objective(s): Students will: describe relationships between precipitation, runoff and aquatic habitats.

Method/Overview: Students measure and calculate the area of the school ground; calculate the volume and weight of water falling on the school ground determine specific and annual rainfall and runoff; and trace the course of that water to aquatic habitats.

Subject Area(s): Math, Science Grade Level(s): 6-12

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 2. Explain patterns of migration throughout the world.	Extension #1 Use your own map, and plot runoff routes on it. Identify drainage patterns.	• everyone completes their own map
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	Extension #4 A serious modern concern is the contamination of groundwater. How might water in the groundwater table or aquifer become contaminated with chemicals potentially harmful to human health? . . . Evaluation #2 Name two human activities that have affected the quality of runoff?	• discuss how these sources of contamination are liked to technology and technological growth
	Secondary Grades 1. Explain factors which shape places and regions over time (e.g., physical and cultural factors).	Extension #4 A serious modern concern is the contamination of groundwater. How might water in the groundwater table or aquifer become contaminated with chemicals potentially harmful to human health? . . . Evaluation #2 Name two human activities that have affected the quality of runoff? . . .	• discuss how these sources of contamination are liked to technology and technological growth

AQUATIC WILD Links\ Social Studies

Activity Title: FISHY WHO'S WHO			Activity Guide Page #: 86
Objective(s): Students will: 1) recognize and identify the major species of freshwater or saltwater fish that live in their area; 2) describe various values of fish species in some aquatic ecosystems; and 3) locate places where the fish species occur.			
Method/Overview: Students do an inventory of fish habitats that exist in their area, obtain information about the various fish species that occur in these habitats, and locate the fish species on a map according to where they occur.			
Subject Area(s): Science, Language Arts			Grade Level(s): 4-12
Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - Geography A. Skills And Tools Students will know how to construct and interpret maps and use globes and other geographic tools to locate and derive information about people, places, regions, and environments.	Elementary Grades 3-4 1. Construct and compare maps of Maine, the United States, and regions of the world to interpret geographical features and draw conclusions about physical patterns.	Procedure #2 Have the students make a large map of the area they have chosen to study showing land as well as major bodies of water: lakes, rivers, large streams, bays, and/or oceans. Make sure each major kind of aquatic habitat - freshwater and/or saltwater – is identified.	• locate the actual sites of these habitats in the area to be studied
	Middle Grades 5-8 2. Develop maps, globes, charts, models, and databases to analyze geographical patterns on the earth.	Procedure #2 Have the students make a large map of the area they have chosen to study showing land as well as major bodies of water: lakes, rivers, large streams, bays, and/or oceans. Make sure each major kind of aquatic habitat - freshwater and/or saltwater – is identified	• locate the actual sites of these habitats in the area to be studied
	Secondary Grades 1. Use mapping to answer complex geographic and environmental problems.	Extension #6 Are there any special fish habitat "hot spots" in your state – places where fish are in danger because of human or natural actions? Note these on your wall map as well and describe the nature of the problem.	

Activity Title: MIGRATION HEADACHE — Activity Guide Page #: 94

Objective(s): Students will: 1) list limiting factors affecting population of migrating water birds; 2) predict the effects of such limiting factors; 3) describe the effects of habitat loss and degradation on populations of migrating water birds; and 4) make inferences about the importance of suitable habitat for migrating water birds.

Method/Overview: Students role play migrating water birds traveling between nesting habitats and wintering grounds and are subject to hazards at either end of the migration path as well as along the way.

Subject Area(s): Science, Language Arts, Math, Science, Social Studies, Physical Education — Grade Level(s): 4-12

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	Procedure #9 Ask students to identify the apparent causes of the bird population decline from year to year. Ask them to make prediction about the effects of these factors.	• have each student identify and analyze the factors that include technology
	Middle Grades 5-8 2. Explain patterns of migration throughout the world.	All Procedures and Evaluation #1 Name two human activities and two environmental factors that might interfere with water bird migration . Extension #4 Using a map, plot the migratory routes of North American birds.	• have everyone give a description or write a story about the migration trip of one bird • all students must complete
Social Studies Civics and Government D. International Relations Students will understand the political relationships among the United States and other nations.	Elementary Grades 3-4 1. Identify examples of how the United States interacts with other countries (e.g., trade, treaties).	Extension #9 There are national laws and international treaties protecting migratory species. Find out about some of these. . .	• all students must complete to meet the standard
Social Studies - History C. Historical Inquiry, Analysis, and Interpretation Students will learn to evaluate resource material such as documents, artifacts, maps, artworks, and literature, and to make judgments about the perspectives of the authors and their credibility when interpreting current historical events.	Elementary Grades 3-4 1. Identify changes currently occurring in their daily lives and compare these to changes in daily life during a specific historic era.	Extension #10 Find out how wetlands have changed or remained the same in your community throughout the last 100 years.	• could be done through individual research or class discussion

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Activity Title: NET GAIN, NET EFFECT Activity Guide Page #: 104

Objective(s): Students will: 1) describe the evolution of fishing from the techniques of early humans to contemporary times: and 2) interpret the possible effects of changes in technology on fish populations.

Method/Overview: Students conduct a simulation to explore the evolution of fishing and the effects of changing technology on fish populations.

Subject Area(s): Science, Math Grade Level(s): 3-6

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	Procedure #18 Identify some of the potential trade-offs related to changes in fishing technologies. Conclude with a discussion of how, if at all, the students think fishing technologies can be developed that minimize any potential long-term negative consequences to healthy fish populations and aquatic environments.	• include ANALYZE with the procedure (identify and analyze)
Social Studies Geography A. Skills And Tools Students will know how to construct and interpret maps and use globes and other geographic tools to locate and derive information about people, places, regions, and environments.	Secondary Grades 1. Use mapping to answer complex geographic and environmental problems.	Extension #3 Investigate the current status of the problems surrounding the netting of tuna. How successful have efforts been to develop, use and enforce use of new nets and technologies to prevent the accidental netting of dolphins?	• have students defend a pro/con side and debate in class
Social Studies Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Elementary Grades 3-4 1. Demonstrate an understanding of why certain areas of the world are more densely populated than others.	Extension #10 Find out about international treaties and organizations dedicated to conserving and protecting oceanic habitats.	• potential research project for individual students

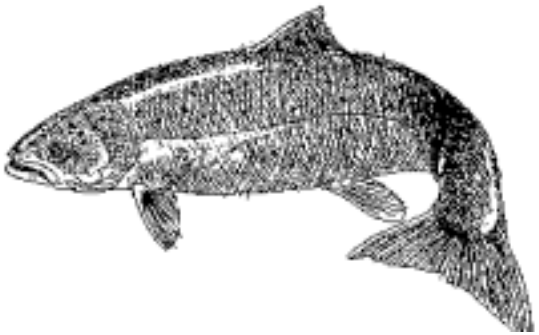
Activity Title: WHERE HAVE ALL THE SALMON GONE? Activity Guide Page #: 110

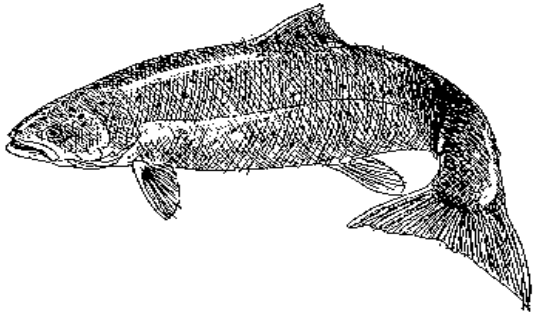
Objective(s): Students will: 1) interpret and make inferences about fluctuations in fish populations from actual data; and 2) analyze the effects of human use and habitat changes on a fish population.

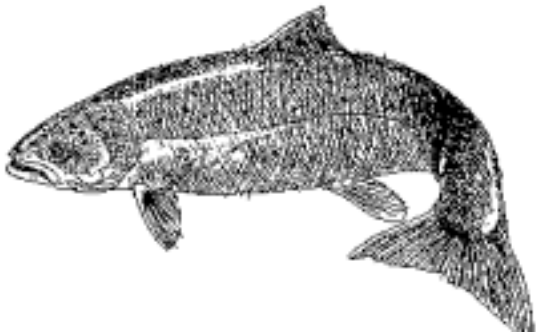
Method/Overview: Students graph and interpret actual fish population data in relation to historical events.

Subject Area(s): Science, Math Grade Level(s): 6-12

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - History A. Chronology Students will use the chronology of history and major eras to demonstrate the relationships of events and people.	Middle Grades 5-8 1. Describe the effects of historical changes on daily life.	Procedure # 3 What new inferences can be made?	• all students complete graph and analyze using historical data
Social Studies History C. Historical Inquiry, Analysis, and Interpretation Students will learn to evaluate resource material such as documents, artifacts, maps, artworks, and literature, and to make judgments about the perspectives of the authors and their credibility when interpreting current historical events.	Middle Grades 5-8 5. Formulate historical questions based on examination of primary and secondary sources including documents, eyewitness accounts, letters and diaries, artifacts, real or simulated historical sites, charts, graphs, diagrams, and written texts.	Procedure #2 Do the graphs seem to show any long-term trends? Are there periods where the rates of fish caught change rapidly in a short time? What inferences about population abundance of each species can be made from the graphs and fish information? What other factors may be affecting the number of fish caught or population levels?	• have students develop their own historical question using the graphs







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Activity Title: WATERED DOWN HISTORY — Activity Guide Page #: 116

Objective(s): Students will: 1) describe human, plant and animal life associated with a waterway from ancient times to the present: 2) predict the future of the waterway; and 3) analyze cause and effect relationships between events and consequences affecting the waterway.

Method/Overview: Students investigate the history of a chosen waterway through standard reference sources as well as taped personal interviews and public records, where available, and then display their findings on a mural.

Subject Area(s): Social Studies (History, Geography) — Grade Level(s): 4-8

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - History A. Chronology Students will use the chronology of history and major eras to demonstrate the relationships of events and people.	Middle Grades 5-8 1. Describe the effects of historical changes on daily life.	Procedure #9 Identify cause and effect relationships between events and consequences of events affecting water ways.	• have each student identify several of these relationships
	Elementary Grades 3-4 2. Place in chronological order, significant events, groups, and people in the history of Maine.	Procedure #9 Have the students/class create a time line noting major events in the waterway's history,	• choose a Maine waterway for this activity
Social Studies - Civics and Government A. Rights, Responsibilities, and Participation Students will understand the rights and responsibilities of civic life and will employ the skills of effective civic participation.	Secondary Grades 1. Develop and defend a position on a public policy issue within our democracy.	Evaluation #2 You are an elected official. Smith represents a group in favor of building a dam on a river to produce irrigation water and recreation opportunities in your area. Jones represents another group that thinks the dam will have a drastic damaging effect on the animals and plants in and along the river. Pick one position to support. What will you say and why?	• have a class debate so that everyone is involved

AQUATIC WILD Links\ Social Studies

Activity Title: WATER WE EATING?			Activity Guide Page #: 120
Objective(s): Students will: 1) identify foods derived from aquatic sources and their geographic origins; and 2) describe the importance of aquatic environments as food sources.			
Method/Overview: Students visit a local supermarket or grocery store and compile a list of products that originate in aquatic habitats.			
Subject Area(s): Social Studies, Science, Health			Grade Level(s): K-12
Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - Geography A. Skills And Tools Students will know how to construct and interpret maps and use globes and other geographic tools to locate and derive information about people, places, regions, and environments.	Elementary Grades Pre-K-2 1. Use and construct maps and other visuals to describe geographic location, direction, size, and shape.	<u>Procedure #4</u> Younger students: On a world map locate the origins of as many items on the list above as possible.	• have each student label their own map
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	<u>Extension #2</u> Determine how agriculture, particularly irrigation, affects natural aquatic habitats.	• have each student come up with a reason
Social Studies - Economics D. International Trade and Global Interdependence Students will understand the patterns and results of international trade.	Elementary Grades Pre-K-2 1. Explain where products come from and how we use them.	<u>Procedure #4</u> On a world map locate the origins of as many items on the list above as possible <u>Procedure #2</u> Older students: Where possible, identify the product, its uses and its source of origin.	• all students need to be able to identify sources and use

AQUATIC WILD Links\ Social Studies

Activity Title: TO DAM OR NOT TO DAM			Activity Guide Page #: 134
Objective(s): Students will: evaluate potential positive and negative effects from constructing a dam on a river.			
Method/Overview: Students role play individuals representing differing perspectives and concerns related to a complex issue.			
Subject Area(s): Social Studies, Science			Grade Level(s): 4-12
Standards	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - Civics and Government A. Rights, Responsibilities, and Participation Students will understand the rights and responsibilities of civic life and will employ the skills of effective civic participation.	Secondary Grades 1. Develop and defend a position on a public policy issue within our democracy.	Procedure #3 Developing a short position paper for use as background for the dramatization of their role.	• all students must complete
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	Extensions #3 Is there a dam in your area? Visit it. Find out about its effects on people, plans and animals, both positive or negative, if any. Evaluation #1 Name two or more possible benefits to people if a dam were constructed on a river. Evaluation #2 Name two or more possible negative consequences to people if a dam were constructed on a river.	• have everyone complete this activity
Social Studies - Economics A. Personal and Consumer Economics Students will understand that economic decisions are based on the availability of resources and the costs and benefits of choices.	Secondary Grades 1. Conduct a cost benefit analysis of a personal or business decision.	Procedure #6 Following the council's decision, have a brief class discussion to summarize the "pros" and "cons" that emerged from the students' presentations. . .	• have each student complete a pro/con sheet

Activity Title: FACTS AND FALSEHOODS			Activity Guide Page #: 138
Objective(s): Students will: 1) develop criteria for evaluating the quality, balance and fairness of an informational presentation; and 2) evaluate the balance and fairness of informational presentations designed to represent points of view about an environmental topic.			
Method/Overview: Students analyze and evaluate print material according to criteria they establish for quality, balance, and fairness; then develop their own informational presentations using such criteria.			
Subject Area(s): Language Arts, Social Studies, Science			Grade Level(s): 7-12
Standards	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - History C. Historical Inquiry, Analysis, and Interpretation Students will learn to evaluate resource material such as documents, artifacts, maps, artworks, and literature, and to make judgments about the perspectives of the authors and their credibility when interpreting current historical events.	Secondary Grades 4. Compare and contrast the reliability of information received from multiple sources (e.g., newspapers, radio or TV, biography, historical narrative) to assess an historical issue.	Procedure #2 Does the article or advertisement cite or list facts? What are they? Does the item make a claim? Is the claim based on or supported by facts or by some sort of evidence? Describe the claims and the supporting facts and evidence. Does the item or article or base its claim or story on some part of science or technology? Or a scientific law or principle used to support the claims? . . .	• in order for this to align strongly, the article must be chosen about a historical aquatic issue

This rubric focuses on a particular content process to address the social studies, history, secondary grade, #4, performance indicator. Students evaluate a tabloid article on an environmental issue. Each student must complete a written response. Additional tables can be developed for writing factors like style, grammar, and organization.

4	Students *exceed* the standard if they address the 6 components below, plus at least one additional issue he/she identifies him/herself.
3	Students *meet* the standard if they include the following 6 components in their response: 1) identify facts or comment on the lack of; 2) identify claims with supporting evidence or the lack of; 3) identify references to scientific principles or the lack of, 4) identify authorities and their credentials or the lack of, 5) identify if the author, publisher, or editor supports any claims, 6) offer an overall assessment of the reliability of the information supplied . Students must supply a rationale for each of the six points.
2	Students *partially address* the standard if they address 3 of the 6 items above.
1	Students *do not meet* the standard if they address 3 or fewer of the items above.

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Activity Title: DEADLY SKIES Activity Guide Page #: 142

Objective(s): Students will: 1) describe acid rain; 2) describe the effects of acid rain on plant life; 3) generate and test hypotheses concerning effects of acid precipitation; and 4) make inferences about the potential effects of acid precipitation on aquatic life.

Method/Overview: Through simulations and direct measurement, the students experience differing conditions of acidity in aquatic habitats and explore the consequences of acidic conditions on aquatic life.

Subject Area(s): Science, Social Studies Grade Level(s): 1-12

Standards	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	Younger students: What causes acid rain? What could acid rain do to these things? Older students: <u>Evaluation #1</u> What is acid precipitation? What are some of the causes of acid precipitation? What are some of the effects of acid precipitation? Write at least three paragraphs to respond. <u>Evaluation #3</u> Predict what happens over time to each of the following as a result of acid precipitation: plants, fish, soil, cars, buildings, aquatic insects, aquatic birds and mammals, aquatic habitats, humans,.	• all students must provide answers
	Secondary Grades 1. Explain factors which shape places and regions over time (e.g., physical and cultural factors).	<u>Evaluation #1</u> What is acid precipitation? What are some of the causes of acid precipitation? What are some of the effects of acid precipitation? Write at least three paragraphs to respond. <u>Evaluation #3</u> Predict what happens over time to each of the following as a result of acid precipitation: plants, fish, soil, cars, buildings, aquatic insects, aquatic birds and mammals, aquatic habitats, humans.	• all students must provide answers

AQUATIC WILD Links\ Social Studies

Activity Title: DEADLY WATERS			Activity Guide Page #: 146
Objective(s): Students will: name and describe different kinds of pollution that can affect water as well as animals and plants that live in water.			
Method/Overview: Students analyze the pollutants found in a hypothetical river. They graph the quantities of pollutants and make recommendations about actions that could be taken to improve the habitat.			
Subject Area(s): Science, Social Studies, Math, Health, Home Economics, Industrial Arts			Grade Level(s): 3-12
Standards	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	Evaluation #1 Describe the effects that large quantities of the following things might have on an aquatic environment. Consider short term and long term effects: hot water, fertilizer, soil (silt), heavy metals, etc. Evaluation #2 Water is taken from a river, treated, used by people of a community, sent to a city sewage treatment plant, and put back into the river. Is this aquatic pollution? Defend your response.	• all students need to answer to meet the standard
	Secondary Grades 1. Explain factors which shape places and regions over time (e.g., physical and cultural factors).	Evaluation #1 Evaluation #2	• all students need to answer to meet the standard

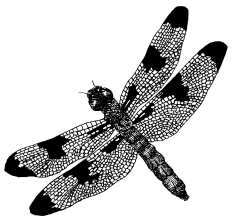
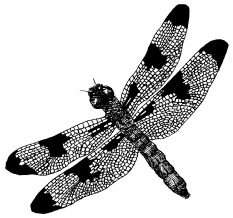
Activity Title: DRAGONFLY POND — Activity Guide Page #: 154

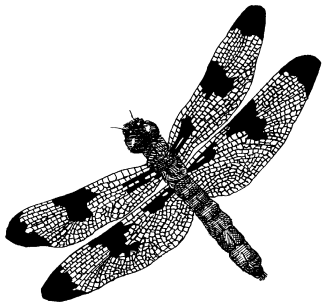
Objective(s): Students will: 1) evaluate the effects of different kinds of land use on wetland habitats; and 2) discuss and evaluate lifestyle changes to minimize damaging effects on wetlands.

Method/Overview: Students create a collage of human land-use activities around an image of a pond.

Subject Area(s): Science, Social Studies — Grade Level(s): 4-12

Standards	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies Geography A. Skills And Tools Students will know how to construct and interpret maps and use globes and other geographic tools to locate and derive information about people, places, regions, and environments.	Secondary Grades 1. Use mapping to answer complex geographic and environmental problems.	<u>Extension #3</u> Trace any stream or river system that passes through your community from its source to its final entrance into the seas. List all the sites that you can identify that lower the quality of the waters in their journey and suggest how to reverse the process.	• have each student make their own tracing and make their own inferences
Social Studies Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	<u>Procedure #10</u> Ask students to brainstorm possible problems that could be faced within each of these aquatic systems as a result of the human activities at Dragonfly Pond. Make inferences and predictions about the potential consequences of these activities. With what effects?	



AQUATIC WILD Links\ Social Studies

Activity Title: WATERSHED			Activity Guide Page #:172
Objective(s): Students will: 1) describe the characteristics of watersheds; 2) discuss the role of watersheds in providing wildlife habitat as well as human habitats; and 3) give examples of how watersheds can be conserved and protected.			
Method/Overview: Students measure the area of a small watershed, calculate the amount of water it receives each year, and discuss the varied roles the watershed plays in human and wildlife habitat.			
Subject Area(s): Science, Math, Social Studies			Grade Level(s): 4-12
Standards	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies - Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	Elementary Grades 3-4 3. Use a variety of materials and geographic tools to explain how the physical environment supports and constrains human activities.	Procedure #9 How does it affect humans?	• all students should answer individually
	Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	Extensions #9 A noted scientist once remarked that, "Human activities speed up the flow of water while nature slows it down." Is this true for the watershed in which you live.	• all students should answer individually

AQUATIC WILD Links\ Social Studies

Activity Title: ALICE IN WATERLAND			Activity Guide Page #: 182
Objective(s): Students will: 1) trace their domestic water to its source prior to human use and to its destination after use; 2) identify potential effects from human water use on terrestrial and aquatic wildlife; and 3) develop and practice responsible water conservation behaviors.			
Method/Overview: Students use a simulated field trip, lecture-discussion and student-gathered data to explore water use and its effects on wildlife habitat.			
Subject Area(s): Science, Math			Grade Level(s): 5-12
Standards	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Social Studies Economics A. Personal and Consumer Economics Students will understand that economic decisions are based on the availability of resources and the costs and benefits of choices.	Secondary Grades 1. Conduct a cost benefit analysis of a personal or business decision.	Extensions #1 Calculate how much money your family would save in water and energy bills if you carried out conservation practices for a year.	• have each student conduct a cost analysis
Social Studies Geography B. Human Interaction with Environments Students will understand and analyze the relationships among people and their physical environment.	[If we define "technology" as human activity i.e. waste water treatment, septic tanks, etc than the following standard applies] Middle Grades 5-8 1. Analyze how technology shapes the physical and human characteristics of places and regions, including Maine.	Procedure #6 Identify, list and discuss places in which the quality of the water in the water cycle may be affected by human activities, not just the quantity of available water.	• have each student do this; this could be used as an assessment question